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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,468	08/04/2005	Sergio Belli	05788.0334	8441

22852 7590 11/29/2007

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EXAMINER	
NGUYEN, CHAU N	

ART UNIT	PAPER NUMBER
2831	

MAIL DATE	DELIVERY MODE
11/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/518,468	BELLI ET AL.	
	Examiner	Art Unit	
	Chau N. Nguyen	2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *46-79 and 83-88* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *46-79 and 83-88* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 51 and 64 are objected to because of the following informalities: in claim 51, line 3, before "IEC" insert --said--; and claim 64, line 1, change "cable" to --method--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 46-62, 73, 75-79, and 83-85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meurer et al. (IEEE publication) in view of Belli et al. (WO 98/52197).

Meurer et al. (Figure 1) discloses a method for designing a cable comprising a conductor, an insulating layer surrounding the conductor and a protective element surrounding the conductor, comprising the steps of: selecting a conductor cross-sectional area, determining a thickness for the insulating layer compatible with safe operation in a predetermined voltage class on the selected conductor cross-sectional area based on one of a plurality of predetermined electrical limit conditions and being smaller than the insulating layer thickness provided for in IEC Standard 60502 for the corresponding voltage class, the insulating layer thickness being such as to provide a voltage gradient on the outer surface of the insulating layer not smaller than 1.0 kV/mm (Figure 4). Meurer et al. also discloses that the predetermined voltage class is not higher than 10 kV (re claim 46), the predetermined voltage class is between 10 kV and 60 kV (re claim 48), the insulating layer thickness is at least 20% smaller than the insulating layer thickness

provided for in the IEC Standard 60502 (re claim 51), the predetermined voltage class is 10 kV and the insulating layer thickness is not higher than 2.5 mm (re claim 52), the voltage class is 20 kV and the insulating layer thickness is not higher than 4 mm (re claim 53), the voltage class is 30 kV and the insulating layer thickness is not higher than 5.5 mm (re claim 54), the conductor is a solid rod (re claim 55), the cable further comprising an electric shield surrounding the insulating layer and comprising a metal sheet shaped in tubular form (re claim 56), said insulating layer thickness is selected so that the electrical stress within the insulating layer when the cable is operated at a nominal voltage corresponding to said predetermined voltage class ranges among values between 2.5 and 18 kV/mm (re claim 57), the protective element is placed in a position radially external to the insulating layer (re claim 58), the conductor is a metal rod (re claim 73), the predetermined voltage class belongs to a medium or high voltage range (re claim 75).

Meurer et al. does not disclose the protective element including at least one polymeric expanded layer. Belli et al. discloses a cable comprising a protective element surrounding a conductor and including at least one polymeric expanded layer (10) such that the cable can withstand impacts of at least 25 J energy (re claim 79) or at least 50 J energy (re claim 47) or of at least 70 J (re claims 49, 78,

79), the degree of expansion of the expanded polymeric layer being between 0.35 and 0.7 or between 0.4 and 0.6 (re claims 59 and 60), the expanded layer having a thickness between 1 and 5 mm (re claim 61), and the expanded layer being formed from polyolefin polymers or copolymers based on ethylene and/or propylene (re claim 62), the expanded layer having a constant thickness (re claim 83). It would have been obvious to one skilled in the art to include the polymeric expanded layer as taught by Belli et al. in the protective element of Meurer et al. to protect the cable against accidental impacts.

Re claim 76, it would have been obvious to one skilled in the art to choose suitable thickness for the insulating layer and the protective element as well as the cross-sectional area for the conductor of Belli et al. to meet the specific use of the resulting cable since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Re claims 50 and 77, it would have been obvious to one skilled in the art to choose the predetermined voltage class to be higher than 60 kV for the cable of Meurer et al. to meet the specific use of the resulting cable since Meurer et al. teaches that the disclosed method or principle can be applied to other rated voltages and since it has been held that where the general conditions of a claim are

disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

5. Claims 62, 63, 69-72 and 84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meurer et al. in view of Belli et al. (WO 99/33070).

Meurer et al. discloses the invention substantially as claimed except for the protective element including at least one polymeric expanded layer which is ethylene copolymers with an ethylenically unsaturated ester in which the quantity of unsaturated ester is between 5% and 80% by weight, a further expanded polymeric layer which is semiconductive or water swellable and in a position radially internal to the protective element and radially external to the insulating layer. Belli et al. discloses a cable comprising a protective element including an expanded polymeric layer which is ethylene copolymers with an ethylenically unsaturated ester in which the quantity of unsaturated ester is between 5% and 80% by weight and a further expanded polymeric layer which is semiconductive or water swellable and in a position radially internal to the protective element and radially external to the insulating layer. It would have been obvious to one skilled in the art to include the expanded layer as taught by Belli et al. in the protective element of Meurer et al. to protect the cable against accidental impacts. It would

have been obvious to one skilled in the art to modify the Meurer et al. layer which is in a position radially internal to the protective element and radially external to the insulating layer to be an expanded layer or to be a swellable layer as taught by Belli et al. to further protect the cable against sudden impacts.

6. Claims 64-68, 74, 84, and 86-88 are rejected under 35 U.S.C. 103(a) as being obvious over Meurer et al. in view of Balconi et al. (2005/0046073).

The applied reference has a common inventor (Sergio Belli) with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in

accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Meurer et al. discloses the invention substantially as claimed except for the protective element including an expanded polymeric layer, at least one non-expanded polymeric layer which is coupled with the expanded layer, made of polyolefin, in a position radially external to the expanded layer, and has a thickness in the range of 0.2 to 1 mm, and a second non-expanded polymeric layer in a position radially internal to the expanded layer, the insulating layer being made of a non-crosslinked base polymeric material.

Balconi et al. (Figure 1) discloses a cable comprising a protective element including an expanded polymeric layer, at least one non-expanded polymeric layer which is coupled with the expanded layer, made of polyolefin, in a position radially external to the expanded layer, and has a thickness in the range of 0.2 to 1 mm, and a second non-expanded polymeric layer in a position radially internal to the expanded layer, the insulating layer being made of a non-crosslinked base polymeric material. It would have been obvious to one skilled in the art to include the layers as taught by Balconi et al. in the protective element of Meurer et al. to protect the cable against sudden impacts.

Response to Arguments

7. Applicant's arguments with respect to claim 84 have been considered but are moot in view of the new ground(s) of rejection.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chau N. Nguyen whose telephone number is 571-272-1980. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F.F. Gutiérrez can be reached on 571-272-2800 ext 31. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Chau N Nguyen
Primary Examiner
Art Unit 2831